

Date: Wednesday, 12/5/2007 10:37:16 AM  
 User: Kim Johnston

## Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services		Drawing Name	: TUBE ASSEMBLY		
Job Number	: 36147		Part Number	: D3021041		
Estimate Number	: 11527		Drawing Number	: D3021/D3017		
P.O. Number	:		Project Number	: N/A		
This Issue	12/5/2007	S.O. No. :	Drawing Revision	: A/A		
Prsht Rev.	: NC		Material	:		
First Issue	11	Type : LARGE FAB ASSY	Due Date	1/10/2008	Qty:	1
Previous Run	: 34896		Um:	Each		
Written By	:					
Checked & Approved By	:					
Comment	: Est. 01.10.23 New Issue SM					

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :	
1.0	M4130NT0750W049	4130 Tube .750 OD x.049W	
Comment: Qty.: 2.1875 f(s)/Unit Total : 2.1875 f(s) 4130 Tube .750 OD x.049W Cut:- AISI 4130N tube, Ø3/4" x 0.049" wall batch: M100843			PD 08.01.15
2.0	LARGE FAB 1	LARGE FABRICATION RESOURCE 1	
Comment: LARGE FABRICATION RESOURCE 1 1-Cut tube as per Dwg D3021  2-Drill tube as per Dwg D3021 using D3021-041T1  3-Deburr			PD 08.01.15
3.0	QC5	INSPECT WORK TO CURRENT STEP	
Comment: INSPECT WORK TO CURRENT STEP			Mo 08/04/23
4.0	M4130NS049	4130 Sheet .049 wall	
Comment: Qty.: 1.0500 sf(s)/Unit Total : 1.0500 sf(s) 4130 Sheet .049 wall Cut:- AISI 4130N sheet, 18 gauge (0.050 thick) batch: M11612 Identify For D3017-11 Cap			PD 08.01.29

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes  No  DQA:  Date: 08/02/08  
QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

## Process Sheet

✓ Customer: CU-DAR001 Dart Helicopters Services		Drawing Name: TUBE ASSEMBLY
Job Number: 36147		Part Number: D3021041
Job Number: 		
Seq. #:	Machine Or Operation:	Description :
5.0	LARGE FAB 1 	LARGE FABRICATION RESOURCE 1 
Comment: LARGE FABRICATION RESOURCE 1 1-Cut end caps as per Dwg D3017		
2-Weld as per Dwg D3021 A/R Steel Rod Batch: <u>M100015</u> PD 080129		
6.0	QC9 	VISUAL WELDING INSPECTION 
Comment: VISUAL WELDING INSPECTION <u>10/01/29</u>		
7.0	QC5 	INSPECT WORK TO CURRENT STEP 
Comment: INSPECT WORK TO CURRENT STEP <u>10/01/29</u>		
8.0	POWDER COATING 	POWDER COATING <u>M106442</u>  (1)
Comment: POWDER COATING Powder Coat Grey Sandtex (Ref: 4.3.5.6) as per QSI 005 4.3 <u>m.h 08/02/05</u>		
9.0	QC3 	INSPECT POWDER COAT/CHEMICAL CONVERSION <u>08-08-05</u>  (1)
Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION <u>08-08-05</u> (1)		
10.0	PACKAGING 1 	PACKAGING RESOURCE #1 
Comment: PACKAGING RESOURCE #1 Identify and Stock Location: <u>GA</u> <u>mf 08-02-07</u> X (1)		
11.0	QC21 	FINAL INSPECTION/W/O RELEASE  (1)
Comment: FINAL INSPECTION/W/O RELEASE <u>10/08/08</u>		
Job Completion 		<u>2008/12/08</u> (1) <u>V</u>

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

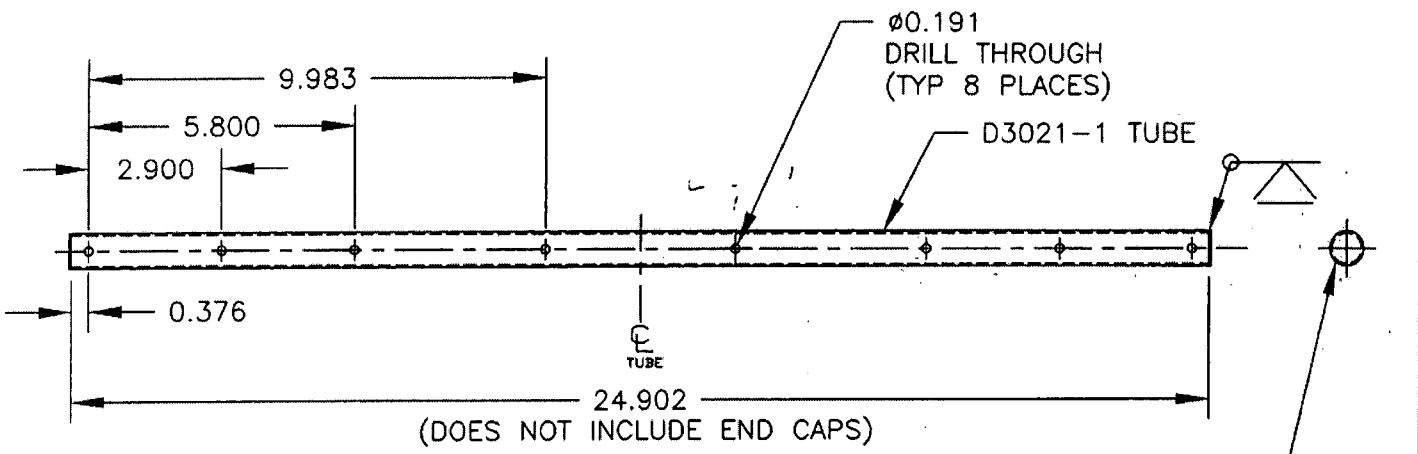
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



ISSUED  
COPY

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
CHECKED	APPROVED	DRAWING NO. D3021 REV. A
DATE		SHEET 1 OF 1
01.05.18		TITLE TUBE ASSEMBLY SCALE 1:4
A	01.05.18	NEW ISSUE



D3021-041 TUBE ASSEMBLY  
(D3021-1 TUBE)

D3017-11 END CAP  
(2 PLACES)  
SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO: 36147

NOTES:

- 1) PART IS SYMMETRIC ABOUT CENTERLINE
- 2) MATERIAL: AISI 4130 TUBE,  $\emptyset 0.75$  DIA x 0.049 WALL (M4130N-T0750W049)
- 3) WELD PER DART QSI 004
- 4) FINISH: POWDER COAT GREY SANTEX (REF 4.3.5.6) PER DART QSI 005 4.3
- 5) ALL DIMENSIONS ARE IN INCHES
- 6) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.

RELEASED  
01.05.2018



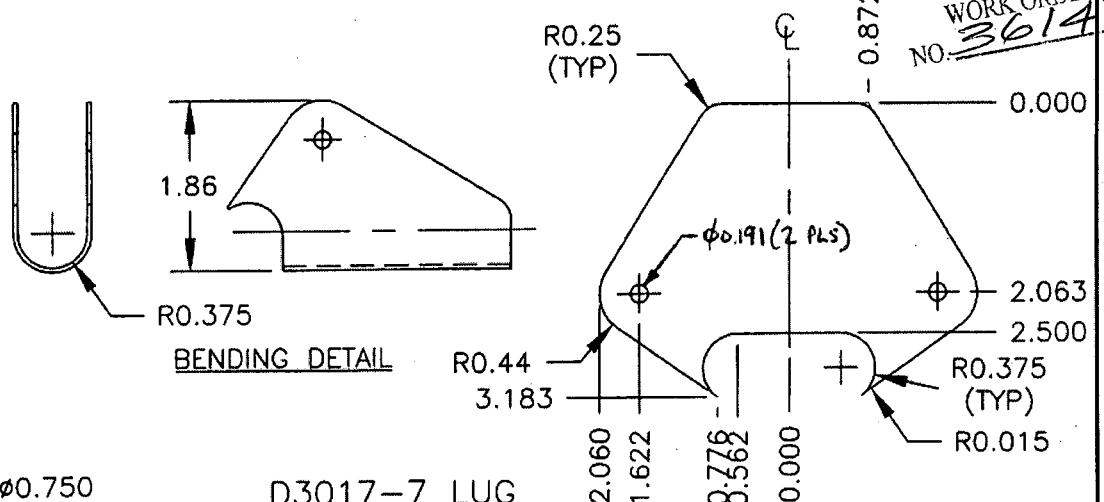
DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		
CHECKED <i>AS</i>	APPROVED <i>AS</i>	DRAWING NO. D3017	REV. A SHEET 1 OF 2	
DATE 01.05.18		TITLE BACK FRAME ASSEMBLY	SCALE 1:1	
A	01.05.18	NEW ISSUE		

QTY	PART No.	DESCRIPTION	MATERIAL
X	D3017-041	BACK FRAME ASSEMBLY	N/A
1	D3017-1	TUBE	AISI 4130N TUBE, Ø0.75 DIA x 0.049 WALL (M4130N-T0750W049)
2	D3017-3	TUBE	AISI 4130N TUBE, Ø0.75 DIA x 0.049 WALL (M4130N-T0750W049)
1	D3017-5	TUBE	AISI 4130N TUBE, Ø0.75 DIA x 0.049 WALL (M4130N-T0750W049)
3	D3017-7	LUG	AISI 4130N SHEET, 18 GAUGE (M4130N-S049)
2	D3017-11	END CAP	AISI 4130N SHEET, 18 GAUGE (M4130N-S049)

## NOTES

- 1) WELD PER DART QSI 004
- 2) ON SHEET METAL PARTS, BREAK ALL UNMARKED CORNERS 0.020-0.040
- 3) FINISH: POWDER COAT GREY SANTEX (REF. 4.3.5.6) PER DART QSI 005 4.3
- 4) ALL DIMENSIONS ARE IN INCHES.
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.

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WITHOUT NOTICE  
WORK ORDER  
NO 36147



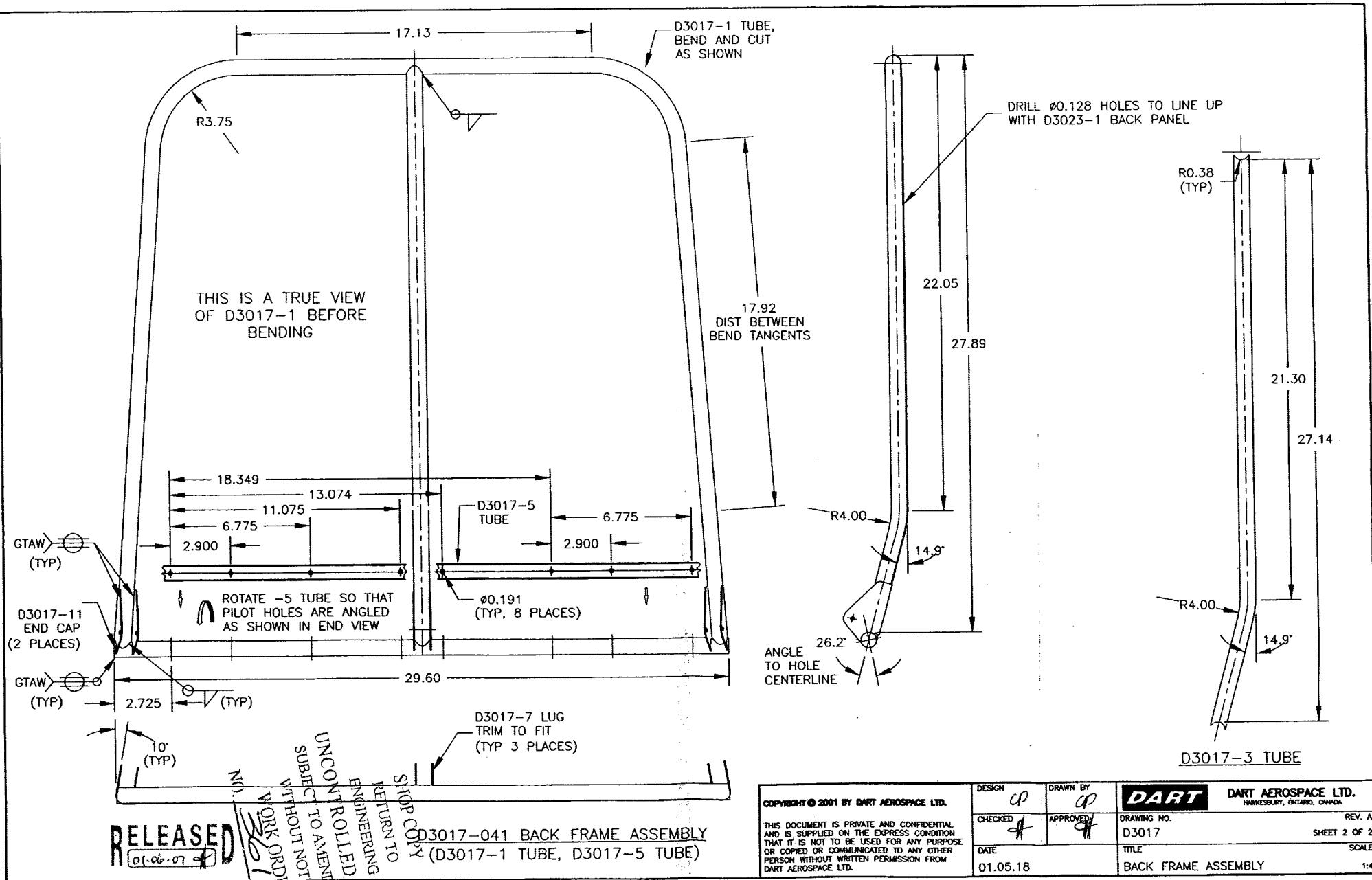
D3017-11 END CAP  
SCALE 1:1

SCALE 2:1  
RELEASED  
01-05-30 4

FLAT PATTERN  
PART IS SYMMETRIC  
ABOUT CENTERLINE

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01-06-07

NO. 36147  
ENGINEERING COPY  
UNCONTROLLED SUBJECT TO AMENDMENT  
WITHOUT NOTICE WORK ORDER

TOP COPY D3017-041 BACK FRAME ASSEMBLY  
(D3017-1 TUBE, D3017-5 TUBE)

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DESIGN

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**DART AEROSPACE LTD.**  
HAWKESBURY, ONTARIO, CANADA

201 1

REV. A 2000

SHEET 2 OF 2

D3017-3 TURF

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01-06-07

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TO AMENDMENT  
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WORK ORDER  
2014